

1. (Currently Amended) A method for producing a cushion material composed of a resin molded article having a spring structure having a three-dimensional structure with voids at a predetermined bulk density comprising the steps of:

forming ~~a~~ the three-dimensional structure ~~with voids at a predetermined bulk density~~ by contacting, entwining, and gathering adjacent ones of random loops or curls of solid and/or hollow ~~continuous filaments and/or short~~ filaments made from a thermoplastic resin;

placing the three-dimensional structure within a cavity of a female die;

heating ~~a male die or a~~ at least the female die, ~~or a female die and/or the three-dimensional structure~~ to a temperature sufficiently high to soften the three-dimensional structure within the cavity of the female die;

setting a volume of the cavity of the female-die to accommodate a stroke of a male-die in a translation into the cavity, said stroke being a distance of the translation of said male-die into said cavity to a position between a minimum stroke closest to a top of said cavity and a maximum stroke, said maximum stroke being at a deep level within said cavity closest to a bottom thereof;

adjusting a thickness of the three-dimensional structure by said translation of the male die while removably engaged with a base adapted for permanent attachment to said three-dimensional structure, into the cavity of the female die for a said stroke equal to or less than said maximum stroke;

~~allowing the male die to intimately contact with the female die so as to tightly compress the three dimensional structure, and~~

compressing the three-dimensional structure between said base and said bottom of said cavity to a thickness corresponding to the length of the stroke of the male-die into the female-die  
~~via closure of the two mating dies,; and~~

hardening the three-dimensional structure by a cooling thereof.

2. (Currently Amended) A method as described in Claim 1 for ~~producing a cushion material composed of a resin molded article having a spring structure wherein:~~

superfluous edges ~~protruded from of~~ the three-dimensional structure protruded outside ~~into the stroke~~ between the two mating dies are cut with a heat cutter so that the edges are cut out and open ends of edge filaments are fused together.

3. (Canceled)

4. (Withdrawn) A cushion material composed of a resin molded article having a spring structure obtained by overlapping two or more layers of sheets each comprising a three-dimensional structure having a same or different spring property, wherein:

the three-dimensional structure is formed by contacting, entwining, and gathering adjacent ones of random loops or curls of solid and/or hollow continuous filaments and/or short

filaments made from a thermoplastic resin; and

the three-dimensional structure is heated in a male die or in a female die to a temperature sufficiently high to soften it, compressed via closure of the two mating dies, and allowed to harden by cooling.

5. (Withdrawn) A cushion material as described in Claim 4 composed of a resin molded article having a spring structure wherein the spring property is determined by the density, material and/or filament diameter of the three-dimensional structure.

6. (Withdrawn) A cushion material as described in any one of Claims 1 to 3 composed of a resin molded article having a spring structure wherein the volume of the resin molded article with a spring structure can be altered by adjusting stroke of the male die when the female die has a deeply set receptive base.

7. (Withdrawn) A cushion material as described in any one of Claims 1 to 3 and 6 composed of a resin molded article having a spring structure wherein, out of the two mating dies, at least the female die is made from concrete.

8. (Withdrawn) A concrete-made female die used for molding a resin molded article with a spring structure which is obtained by preparing a framework according to a master female die effective for molding a resin molded article with a spring structure,

pouring concrete paste into the space within the framework, and allowing the concrete paste to harden.

9. (Withdrawn) A cushion material as described in any one of Claims 1 to 3 and 6 and 7 composed of a resin molded article having a spring structure wherein the vertical movement of at least one of the two mating dies is achieved by a pantograph jack.

10. (Withdrawn) A cushion material composed of a resin molded article having a spring structure comprising a three-dimensional structure, wherein:

the three-dimensional structure is formed by contacting, entwining, and gathering adjacent ones of random loops or curls of solid and/or hollow continuous filaments and/or short filaments made from a thermoplastic resin; and

the three-dimensional structure has, on both its top and bottom surfaces, two or more bulges formed on predetermined linear areas by stitching the boundaries of each area using a thread of a thermoplastic resin, and shortening the thread by pressure.

11. (Withdrawn) A method for producing a cushion material composed of a resin molded article having a spring structure, comprising the steps of:

extruding a melt of a thermoplastic resin into filaments and contacting, entwining, and gathering adjacent ones of random loops or curls of continuous filaments, thereby forming a three-dimensional structure containing voids at a predetermined bulk density;

cutting the periphery of the three-dimensional structure or a resin molded article with a spring structure to give a U- or V-shaped profile, and stitching the thus formed edges with a thread of a thermoplastic resin; and

stitching with a thread of a thermoplastic resin the boundaries of predetermined linear areas on the top and bottom surfaces of the three-dimensional structure, and shortening the thread by pressure.

12. (Withdrawn) A method as described in Claim 11 for producing a cushion material composed of a resin molded article having a spring structure, comprising the steps of:

placing the three-dimensional structure on a female die;

heating the female die and/or the three-dimensional structure to a temperature sufficiently high to soften the three-dimensional structure;

allowing a male die to intimately contact with the female die so as to tightly compress the three-dimensional structure;

cooling the three-dimensional structure to confer a constant spring property thereto; and

stitching with a thread of a thermoplastic resin the boundaries of predetermined linear areas on the top and bottom surfaces of the three-dimensional structure, and shortening the thread by pressure.